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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,548	11/20/2003	Kiyoshi Nakakuki	01-496	5679
23400	7590	11/14/2005		
POSZ LAW GROUP, PLC 12040 SOUTH LAKES DRIVE SUITE 101 RESTON, VA 20191			EXAMINER DICUS, TAMRA	
			ART UNIT 1774	PAPER NUMBER

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/716,548

Applicant(s)

NAKAKUKI ET AL.

Examiner

Tamra L. Dicus

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10-20-05
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

The election of Group II, claims 12-26 is acknowledged.

#### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 15 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 15 recites the limitation "the first and the second toner particles". There is insufficient antecedent basis for this limitation in the claim.
4. Claim 23 recites the limitation "said transparent layer of printed toner particles". There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,266,427 to Iwase et al. in view of USPN 5,614,290 to Yamaguchi.

Iwase teaches a display board comprising a transparent substrate and a picture layer 3 composed of transparent photopolymerization resin 2 such as an epoxy acrylate (same as

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“protecting film”), with base film 1 of polycarbonate (transparent base) having printed coloring agents that are red, yellow, magenta, cyan, and carbon black (same as dot-red, yellow, magenta, cyan and black toners on page 11 and page 13, line 27 of Applicant’s specification) and ink via screen printing (col. 4, line 25-27) used as a speedometer (having direction indicator, display, scale mark and letter of instant claim 20). See Abstract, col. 1, lines 10-15, col. 2, line 65, col. 3, lines 55-col. 4, lines 45, col. 5, lines 40-55, and col. 11, lines 14-66. Thus layers 2-3 of Iwase (col. 6, lines 1-21) are equivalent to a display pattern. See Figures 7-10, col. 7, lines 34-68 and col. 8, lines 15-55. See col. 2, lines 38-56 and col. 5, lines 2-19.

The optical density of the colors used are from 0.1 to 3.5 (see col. 4, lines 25-35 and col. 9, lines 40-49) measured with a transmission density meter, falling within Applicant’s range of at least 3.0 and no more than 1.0 of instant claim 10 and transparent optical density of 0.1 to 1 of instant claim 17. See also Table 2 and col. 11, lines 5-55. A black or white background portion is also present. See col. 7, lines 35-45, col. 8, lines 25-26, col. 9, lines 40-49, col. 11, lines 5-55. The optical density of black up to 3.5 -col. 4, line 32. See col. 8, lines 1-5 to the white optical density of 0.3 to 1.0. Regarding claims 13 and 22, Because there are a variety of colors taught having a variety of colors with densities in printed overlapping fashion (FIG. 16 showing white 31, red 32, and black 33), the density gradually changes and thus represents a slope. See also col. 7, lines 35-col. 8, line 68.

The display board is illuminated with a light source the same as Applicant (instant claims 13).

Iwase does not teach the colored ink and toners are transparent layers of ink (instant claim 12) defined by borders (instant claim 13) or of plurality of blue ink (instant claim 21), or

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where the transparent layer of toner particles includes a higher or lower and larger perceptive area instant claim 14), or the opaque layer comprising two layers of various colored particles (instant claim 15-17) .

Yamaguchi teaches a backlight display panel (col. 2, line 25) having a color pattern of transparent or opaque coloring toner and ink printed on a transparent resin sheet, defined by border lines in multiple coatings via printing combinations to form colors arranged in each row (parallel fashion, instant claim 12) and/or mosaic type patterns (col. 2, lines 50-53) including red, blue, and green colors (col. 2, lines 30-53, col. 3, lines 60-22, col. 5, line 49-col. 6, line 55).

It would have been obvious to one having ordinary skill in the art to have modified the backlight panel of Iwase to produce the variety of designs as defined by instant claims 12-17 and 21 using transparent ink in more than one layer because Yamaguchi teaches opaque, colored, and transparent ink are equivalents using a color pattern of transparent or opaque coloring toner and ink printed on a transparent resin sheet, defined by border lines in multiple coatings via printing combinations to form colors arranged in each row and/or mosaic type patterns forming a color image viewed in the same way with a back light (Abstract, col. 2, lines 30-53, col. 3, lines 60-22, col. 5, line 49-and col. 6, line 55 of Yamaguchi). Further, because Iwase teaches red, yellow, green, white and black colors and Yamaguchi teaches red, green, and blue colors, it is obvious in view of the teachings to make it any color dependent upon the color density one desires and how the image is displayed.

Regarding claims 18-19, While Iwase teaches printed ink 3 on protective film 2 (FIGS. 8 and associated text) and Yamaguchi teaches transparent or colored ink adjacent to protective film (col. 6, lines 1-5), Iwase does not teach transparent ink is printed on the film or the ink

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constituted of a plurality of color ink layers. However, in view of the prior art teachings, it would have been obvious to one having ordinary skill in the art to have printed transparent ink on a protective layer and constituting color ink layers because Yamaguchi teaches the transparent and colored ink next to protective films and Iwase teaches printed ink on either side of the substrate is a conventional design for a backlight display.

Iwase does not teach transparent ink layer including a direction indicator, or other requirements of instant claim 20.

However Iwase teaches printing color to produce the markings of a speedometer (includes requirements of claim 20) (col. 8, lines 30-35 and Figure 10) and Yamaguchi teaches color or transparent ink is an equivalent, it would have been obvious to one having ordinary skill in the art to have modified the dial of Iwase to include printing in transparent ink to result in the dial as claimed.

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,266,427 to Iwase et al. in view of USPN 5,614,290 to Yamaguchi and further in view of USPN 6,065,846 to Kato et al. and further in view of USPN 5,289,351 to Kashima et al.

Iwase teaches a display board comprising a transparent substrate and a picture layer 3 composed of transparent photopolymerization resin 2 such as an epoxy acrylate (same as “protecting film”), with base film 1 of polycarbonate (transparent base) having printed coloring agents that are red, yellow, magenta, cyan, and carbon black (same as dot-red, yellow, magenta, cyan and black toners on page 11 and page 13, line 27 of Applicant’s specification) and ink via screen printing (col. 4, line 25-27) used as a speedometer. To the protecting film being made of ultraviolet curing epoxy resin whose hardening shrinkage degree of volume is less than 5%,

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Iwase teaches the protective film made of epoxy acrylate and applying an ultraviolet light to set the layer. Iwase is absent to a teaching of the shrinkage degree however, in view of the same material and ultraviolet curing and in view of absence of any shrinkage, claim 23 is met. See Abstract, col. 1, lines 10-15, col. 2, line 65, col. 3, lines 55-col. 4, lines 45, col. 5, lines 40-55, and col. 11, lines 14-66. Thus layers 2-3 of Iwase (col. 6, lines 1-21) are equivalent to a display pattern. See Figures 7-10, col. 7, lines 34-68 and col. 8, lines 15-55. See col. 2, lines 38-56 and col. 5, lines 2-19. The display board is illuminated with a light source the same as Applicant.

Iwase does not teach the colored ink and toners are transparent layers of ink or where the transparent protecting film covering a transparent layer of printed toner (instant claim 22).

Yamaguchi teaches a backlight display panel (col. 2, line 25) having a color pattern of transparent or opaque coloring toner and ink printed on a transparent resin sheet, defined by border lines in multiple coatings via printing combinations to form colors arranged in each row and/or mosaic type patterns including red, blue, and green colors and teaching a transparent protective layer 22 covering the transparent printed toner particles (FIG. 6, col. 2, lines 30-53, col. 3, lines 60-22, col. 5, line 49-col. 6, line 55).

It would have been obvious to one having ordinary skill in the art to have modified the backlight panel of Iwase to produce the designs as defined by instant claim 22 using transparent toner particles and a transparent protecting film covering the particle particles because Yamaguchi teaches opaque, colored, and transparent ink are equivalents to using a color pattern of transparent or opaque coloring toner and ink printed on a transparent resin sheet, to form colors arranged in each row and/or mosaic type patterns forming a color image viewed in the same way with a back light and protective film to cover the color image to serve as protecting the

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design (Abstract, FIG. 6, col. 2, lines 30-53, col. 3, lines 60-22, col. 5, line 49-and col. 6, line 55 of Yamaguchi).

6. The combination does not teach a light conductive plate made of polycarbonate and acrylic.

7. Kato teaches a light conductive plate of transparent light transmissive material such as acrylic mounted onto a dial plate for illuminating the dial plate in an automobile (Abstract, col. 2, lines 10-31).

8. To the polycarbonate absence, Kashima teaches a backlighting device using a light conducting plate 1 made of light transmissive acrylic and polycarbonate (col. 2, lines 35-67).

9. It would have been obvious to one having ordinary skill in the art to have modified the combination to further include a light conductive plate of acrylic because Kato teaches a light conductive plate of transparent material such as acrylic mounted onto a dial plate for illuminating the dial plate in an automobile (Abstract, col. 2, lines 10-31 of Kato) and further obvious to use polycarbonate in the light conductive plate because Kashima teaches light transmissive polycarbonate is an equivalent of acrylic used in a light conducting plate 1 of a backlighting device (Abstract, col. 2, lines 35-67 of Kashima).



10. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,266,427 to Iwase et al. in view of USPN 5,614,290 to Yamaguchi and further in view of USPN 6,065,846 to Kato et al. and further in view of USPN 5,289,351 to Kashima et al., as applied to claim 24 above, and further in view of USPN 5,903,391 to Toshima et al.

The combination of Iwase, Yamaguchi, Kato, and Kashima are relied upon above for claim 23.

The combination does not teach the ultraviolet curing epoxy acrylate (taught by Iwase as a photopolymerizing resin and UV cured) is made of cationic polymer (instant claim 24) or including beads or fillers (instant claim 25).

Toshima teaches an optical film having high lighter transmittance used with light conductive plates and illuminated displays including an ultraviolet curable resin formulation of photopolymerizing prepolymers such as epoxy acrylate with a functional group which is radical polymerized or polymerized by ionization radiation. The radical polymerized prepolymers are preferable because their hardening speed is high and enables to design the resin freely and overall to achieve good light diffusibility. Beads are added to effect the light diffusion and transmission (col. 2, lines 20-37, col. 4, lines 20-40). See Abstract, col. 1, line 5-8, col. 3, lines 7-46, and Examples 1-2.

It would have been obvious to one having ordinary skill in the art to have modified to have included a ultraviolet curing epoxy acrylate of cationic polymer in the protective film made of photopolymerizing epoxy acrylate because Iwase teaches photopolymerizable acyclic acrylate and Toshima teaches including photopolymerizing prepolymers of ultraviolet curable

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epoxy acrylate with a functional group which is polymerized by ionization radiation high hardening speed and enables to design the resin freely and overall to achieve good light diffusibility and adds beads to effect the light diffusion and transmission (Abstract, col. 1, line 5-8, col. 2, lines 20-37, col. 3, lines 7-46, col. 4, lines 20-40, and Examples 1-2 of Toshima).

11. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,266,427 to Iwase et al. in view of USPN 5,614,290 to Yamaguchi and further in view of USPN 6,065,846 to Kato et al. and further in view of USPN 5,289,351 to Kashima et al., as applied to claim 24 above, and further in view of USPN 5,903,391 to Toshima et al., and further in view of USPN 5,247,429 to Iwase et al. (Iwase '429).

12. The combination does not teach a luster controlling layer on the base.

13. Iwase '429 teaches an illuminance adjusting layer 2 (luster control) printed on the base 1 (FIG. 3 and col. 2, lines 15-50) to adjust the way the display is viewed.

It would have been obvious to one having ordinary skill in the art to have modified to have further included a luster control layer on base because Iwase '429 teaches an illuminance adjusting layer 2 (luster control) printed on the base to adjust the way the display is viewed (Abstract, FIG. 3 and col. 2, lines 15-50 of Iwase '429).

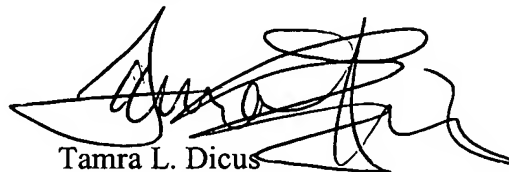
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tamra L. Dicus  
Examiner  
Art Unit 1774

November 3, 2005



RENA DYE  
SUPERVISORY PATENT EXAMINER  
A.U. - 1774 11/8/05